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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LEFF, STEVEN N	

ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/612,972	HOLZSCHUH ET AL.	
	Examiner	Art Unit	
	Steven Leff	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-25,30-33 and 37-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-25,30-33 and 37-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

- Claims 17-20, 22-25, 30-33 and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed et al. (4255129) in view of Weissman (3012124) and further in view of Matovich (4057396).

  Reed et al. teach a process for the production of smoke, where the smoke is obtained by pyrolysis of an organic material (col. 6 line 1+). More specifically Reed et al. teach introducing the organic material to be pyrolyzed into a pyrolysis reactor comprising a heatable chamber substantially sealed (col. 4 line 47+), containing at least one ascending tubular element that is vibrated and receives the organic material (col. 9 line 19+). Reed et al. further teach that the material is introduced at the level of the lower portion of the tubular element (col. 10 line 12+), where the chamber is at a temperature comprised between 300°C and 400°C (col. 18 line 13, i.e. sawdust heated to 700F) so as to produce pyrolysis during its movement, under the effect of vibrations, in the ascending tubular element or elements (abstract).

Reed et al. further teach extracting the consumed organic material and the produced smoke at the level of the upper portion of said tubular element or elements (col. 12 line 34), where the tubular element or elements are given a vibratory movement having a horizontal and/or vertical component (col. 11 line 1+). The organic material is dried by preheating before it is pyrolyzed (col. 14 line 45+), and the smoke produced is condensed at the outlet of the reactor in a suitable condensation device (col. 6 line 2+). Reed et al. continue by teaching that pyrolysis takes place under strict control, to about 0.1%, of the volume content of oxygen in said reactor (col. 15 line 26+), and to about one degree Celsius, of the temperature prevailing in the reactor (col. 8 line 5+). In addition the pyrolyzed organic material consists essentially of woodchips or essentially of fibers or chips of at least one vegetable substance (col. 16 line 53+).

Reed et al. teach a process for producing liquid smoke flavor, comprising introducing organic material to be pyrolyzed into a pyrolysis reactor (abstract), in the reactor at a temperature comprised between 300°C and 400°C (col. 18 line 13, i.e. sawdust heated to 700F) so as to produce pyrolysis under the effect of vibrations (abstract), and further extracting the consumed organic material and the liquid smoke (col. 6 line 2+). Reed et al. further teach that the organic material is dried by preheating before it is pyrolyzed (col. 14 line 45+).

However Reed et al. is silent with respect to the conveying device being tubular in shape.

Weissman teaches a smoke generator for generating smoke from hard wood chips to be used in curing comestibles (col. 1 line 7+). More specifically with respect to claims 17 and 30, Weissman teaches a tubular element which is vibrated for its art recognized and applicant's intended function of moving the material within the chamber in a uniform manner (col. 2 line 40+).

Therefore, although Reed et al. is silent with respect to the conveying device being tubular in shape, Reed et al. does teach the use of a lip in conjunction with conveying device which allows the material to remain within the conveying device regardless of the fact that the conveying device is being vibrated. It is further noted that due to the organic material traveling in an upward fashion, the rate of vibration would be required to be stronger due to the fact that the material is working against gravity as opposed to with gravity as is the case if the material were descending.

In addition, Weissman does specifically teach a tubular element which is vibrated and receives the organic material. Therefore one of ordinary skill in the art would have been motivated to combine the teachings of Reed et al. and Weissman and produced liquid smoke using a tubular element for conveying the material in order to further guarantee that none of the material is "thrown" from the conveyor due to the vibrations, in addition to the fact that the tubular element allows for a smaller heating area which needs to be heated in order to achieve the expected results in a shorter amount of time due to the smaller heating area.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to teach a tubular element which conveys the organic material in an ascending fashion in order to further enhance the overall efficiency of the process due to a more confined environment.

However both Reed et al. and Weissman are silent with respect to the tubular element comprises a heating device to electrically heat the organic material by the Joule effect.

Matovich teaches a high temperature reactor which is useful with respect to pyrolysis (col. 1 lines 39-40). More specifically Matovich teaches a means for passing an electric current through the reactor tube for heating the reactor tube (abstract lines 15-18), using an electrically resistive refractory material so that a sufficiently large current there through causes it to become heated to a temperature at which it emits sufficient radiant energy to initiate and sustaining the desired chemical reactions (col. 9 lines 59-64).

Therefore, although Reed et al. do not specifically state that material is heated directly by the tubular elements, one of ordinary skill in the art would expect some heating to take place due to the temperature of the conveyor being affected by the atmosphere temperature within the area which it is located in, thereby heating the conveyor. In addition, Weismann does specifically state directly heating the trough with heat bars (fig. 3 ref. # 20, col. 3 line 1+) allowing the temperature within the chamber to be more easily controlled due to the fact that the heaters are focused in a specific region with respect to the food itself and the tubular element, where Matovich positively teaches heating using the Joule effect (abstract lines 15-18) for its art recognized and applicant's intended purpose of supplying heat by radiation coupling rather than by convection and/or conduction, thus the temperature of the reactant stream may be independent of

both the temperature of the pressure vessel wall and of the condition of the reactant stream, and the serious strength of materials problem is overcome(col. 4 lines 51-64). Although it provides a heated wall as a source of radiant energy, the reactor tube of the present invention is not subjected to the high pressures which are normally attendant to many kinds of reactions. For this reason, refractory materials which are not suitable for use as a wall material in a conventional reactor may be successfully employed. This feature permits reaction temperatures far in excess of those presently achievable and reactions which had been only theoretically feasible may be carried out (col. 4 lines 51-69).

Therefore although neither Reed et al. nor Weissman teach heating via the Joule effect both do teach high temperature reactions in a pyrolysis reactor, where Weissman, and further where Matovich specifically teaches directly heating the trough with heat bars (fig. 3 ref. # 20, col. 3 line 1+), and where Matovich specifically teaches heating the tubular trough via the Joule effect (col. 9 lines 59-64), one of one of ordinary skill in the art would have been motivated to combine the teachings of Reed et al., Weissman and Matovich and taught heating via the Joule effect, for its art recognized and applicant's intended purpose of providing a method where the temperature of the reactant stream may be independent of both the temperature of the pressure vessel wall and of the condition of the reactant stream, as is taught by Matovich (col.4 lines 51-69).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to teach heating via the Joule effect since Matovich specifically teaches such (col. 9 lines 59-64, col. 4 lines 51-69) with respect to pyrolysis reactions, in addition to the fact that MPEP 2144.07 states that the selection of a known process based on its suitability for its intended use supports a prima facie obviousness determination.

- Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reed et al. (4255129) in view of Weissman (3012124) and Matovich (4057396) and in further view of Wistreich (3875314).

Reed et al., Matovich and Weissman are taken as above however both are silent with respect to re-injecting pyrolysis gas into the reactor.

Wistreich et al. teaches production of liquid smoke. More specifically Wistreich teaches that it is desirable to mount the condenser in communication with and preferably at the top of the reactor for continuous flow of vapors and gases exhausted from the top of the reactor to the inlet at the bottom of the condenser in order to enhance yield of materials extracted (col 3 lines 26-43). Therefore it would be obvious to one of ordinary skill in the art to combine the teachings of Reed et al. and Weismann with Wistreich et al. and taught recirculating the vapors and gases in order to enhance yield as is taught by Wistreich et al.

- Claims 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed et al. (4255129) in view of Weissman (3012124).

Reed et al. teach a process for the production of smoke, where the smoke is obtained by pyrolysis of an organic material (col. 6 line 1+). More specifically Reed et al. teach introducing the organic material to be pyrolyzed into a pyrolysis reactor comprising a heatable chamber substantially sealed (col. 4 line 47+), containing at least one ascending tubular element that is vibrated and receives the organic material (col. 9 line 19+). Reed et al. further teach that the material is introduced at the level of the lower portion of the tubular element (col. 10 line 12+), where the chamber is at a temperature comprised between 300°C and 400°C (col. 18 line 13, i.e. sawdust heated to 700F) so as to produce pyrolysis during its movement, under the effect of vibrations, in the ascending tubular element or elements (abstract).

Reed et al. further teach extracting the consumed organic material and the produced smoke at the level of the upper portion of said tubular element or elements (col. 12 line 34), where the tubular element or elements are given a vibratory movement having a horizontal and/or vertical component (col. 11 line 1+). The organic material is dried by preheating before it is pyrolyzed (col. 14 line 45+), and the smoke produced is condensed at the outlet of the reactor in a suitable condensation device (col. 6 line 2+). Reed et al. continue by teaching that pyrolysis takes place under strict control, to about 0.1%, of the volume content of oxygen in said reactor (col. 15 line 26+), and to about one degree Celsius, of the temperature prevailing in the reactor (col. 8 line 5+). In addition the pyrolyzed organic material consists essentially of woodchips or essentially of fibers or chips of at least one vegetable substance (col. 16 line 53+).

Reed et al. teach a process for producing liquid smoke flavor, comprising introducing organic material to be pyrolyzed into a pyrolysis reactor (abstract), in the reactor at a temperature comprised between 300°C and 400°C (col. 18 line 13, i.e. sawdust heated to 700F) so as to produce pyrolysis under the effect of vibrations (abstract), and further extracting the consumed organic material and the liquid smoke (col. 6 line 2+). Reed et al. further teach that the organic material is dried by preheating before it is pyrolyzed (col. 14 line 45+).

Weissman teaches a smoke generator for generating smoke from hard wood chips to be used in curing comestibles (col. 1 line 7+). More specifically with respect to claims 17 and 30, Weissman teaches a tubular element which is vibrated for its art recognized and applicant's intended function of moving the material within the chamber in a uniform manner (col. 2 line 40+).

Therefore, although Reed et al. is silent with respect to the conveying device being tubular in shape, Reed et al. does teach the use of a lip in conjunction with conveying device which allows the material to remain within the conveying device regardless of the fact that the conveying device is being vibrated. It is further noted that due to the organic material traveling in an upward fashion, the rate of vibration would be required to be stronger due to the fact that the material is working against gravity as opposed to with gravity as is the case if the material were descending.

In addition, Weissman does specifically teach a tubular element which is vibrated and receives the organic material. Therefore one of ordinary skill in the art would have been motivated to combine the teachings of Reed et al. and Weissman and produced liquid smoke using a tubular element for conveying the material in order to further guarantee that none of the material is "thrown" from the conveyor due to the vibrations, in addition to the fact that the tubular element allows for a smaller heating area which needs to be heated in order to achieve the expected results in a shorter amount of time due to the smaller heating area.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to teach a tubular element which conveys the organic material in an ascending fashion in order to further enhance the overall efficiency of the process due to a more confined environment.

Response to Arguments

With respect specifically to applicant's statement that Reed et al. and Weissman fail to teach all of the limitations with respect to the claims, it is noted that the one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references in response to applicant's arguments against the references individually,. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

With respect to applicant's assertion that the examiner fails to provide reasoning for combining the two references, applicant is urged to the Office action of 7/26/07 which provided motivation for the obviousness of combining the teaching of Reed et al. and Weissman.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Leff whose telephone number is (571) 272-6527. The examiner can normally be reached on Mon-Fri 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

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SL

1/22/08

DREW BECKER
PRIMARY EXAMINER

1/22/08